

Shade and Hansen, 1992

Data Set 54

Reference: Shade, M.E. and D.K.T. Hansen, 1992, Drilled sidewall cores aid in interpretation of the Tertiary Wasatch Formation, Natural Buttes Field, Utah: in T.D. Fouch, V.F. Nuccio, and T.C. Chidsey, Jr., eds., Hydrocarbon and Mineral Resources of the Uinta Basin, Utah Geological Association Guidebook 20, p. 193-218.

Reference: Hartmann, D.J. and L. MacMillan, 1992, Petrophysics of the Wasatch Formation and Mesaverde Group, Natural Buttes producing area, Uinta Basin, Utah: in T.D. Fouch, V.F. Nuccio, and T.C. Chidsey, Jr., eds., Hydrocarbon and Mineral Resources of the Uinta Basin, Utah Geological Association Guidebook 20, p. 175-192.

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Age: Tertiary and Early Cretaceous

Formation: Wasatch Formation and Mesaverde Group

Location: Natural Buttes Field, Uinta Basin, Uintah County, Utah, United States

Well: Apache Federal #12-25

Depth range: 4641 - 7980 feet.

Lithology: "lenticular arkosic (all samples except one) and lithic subgraywacke (one sample at 5926 feet) deposits. Fluvial to deltaic in origin and indicate a marginal lacustrine environment." "The detrital grains consist of quartz, plagioclase, and potassium feldspar and lithic fragments with a trace of mica. The detrital grains are cemented by calcite, dolomite, and anhydrite. Traces of halite were noted in several of the samples."

Alteration: "From thin sections, it was possible to identify authigenic vermiform kaolinite filling pores, thin authigenic chlorite rims on grains, in addition to chlorite within grains as an alteration product and replacing biotite flakes. ... Much of the original intergranular porosity was reduced by pressure solution and grain compaction which led to cementation by syntaxial quartz and feldspar overgrowths. Alteration of unstable grains such as feldspars and lithic fragments led to the development of grain leaching and growth of authigenic clay minerals which then filled many of the remaining pores. Carbonate, halite, and anhydrite cementation further reduced the porosity."

Production: gas and condensate from basin-centered tight gas sands.

Core measurement conditions: rotary sidewall cores, routine core analysis at atmospheric conditions, permeability by steady-state method using nitrogen gas.

Data entry: manual entry from Tables 2b and 3 and Figure 6 of the referenced paper by Shade and Hanson.